

REMARKS

Claims 1-5 and 7-14 are pending in the Application. Claims 8-13 stand withdrawn as being directed to a non-elected invention. Claim 1 has been amended to incorporate the limitations of claim 3. Claims 3 and 14 are canceled.

Claims 1-14 have been restricted as follows:

Group I - claims 1-5, 7 and 14, directed to a composite material; and

Group II - claims 8-13, directed to a method of making a composite material.

Applicants affirm the election of Group I, claims 1-5, 7 and 14, with traverse.

Claim 14 has been rejected under 35 USC § 102(b) as being anticipated by Grunwald et al. (US 3,819,497). Applicants submit that this rejection is mooted by the present invention and respectfully request that this rejection be withdrawn.

Claims 1-5, 7 and 14 have been rejected under 35 USC § 103(a) as being unpatentable over Hsi-Lui (US 3,561,995) in view of Grunwald. Applicants respectfully traverse.

The Hsi-Lui patent is directed to a method of plating on polymeric materials. This patent fails to teach or suggest that the binding strength of the metal layer to the polymeric material can be improved by hot-pressing.

The Grunwald patent is directed to improving the binding strength of an electrolessly deposited metal on a *metal* substrate. See the abstract: "Substantial improvement in the adhesion between the *copper* surface and the *metal* deposited by electroless and electrolytic plating is achieved." (Emphasis added.) It is clear from a reading of this patent that it relates to metal plating on a metal surface. See also column 1, lines 6-8: "This invention relates to a process for copper plating and, more particularly, to a process for plating copper *on a copper* substrate." Also, see column 1, lines 46-51: "In plating copper electrolessly *on a copper substrate* all of the processes proposed by the prior art have suffered from several disadvantages,

the most serious being that the adhesion between the electrolessly plated copper and the copper substrate surface has been inconsistent and often very poor.” Still further, at column2, lines 48-52, the patent states: “It is a primary object of this invention to provide an electroless plating process *for plating copper on a copper surface* which will give an adequate bond between the deposited copper and the *initial* copper-clad surface.” (Emphasis added.) Thus, it is quite clear to one skilled in the art reading the Grunwald patent that it is directed to improving the adhesion between an electrolessly deposited copper layer and a *copper* substrate. Grunwald achieves such improved electrolessly deposited metal to copper substrate adhesion by heating. See column 5, lines 6-15, which discloses the range of temperatures employed. Nothing in Grunwald teaches or suggests “hot-pressing”, i.e. heating under pressure. (See the present Specification at page 15, paragraph [0048], which clearly defines “hot-pressing” to be heating under pressure.) Nothing in this patent teaches or suggests improving the adhesion of a deposited metal layer to a resin base. In fact, nothing in the Grunwald patent discusses the problem of adhesion of a metal layer to a resin base. As Grunwald does not recognize the problem, neither does Grunwald suggest a solution.

There is no motivation to combine these references. Hsi-Lui is directed to depositing a metal layer on a polymer. As discussed above, this patent neither teaches nor suggests a composite having improved adhesion by hot-pressing. Grunwald is directed to improving the adhesion of an electrolessly deposited metal layer to a copper surface. Grunwald neither teaches nor suggests a composite having improved adhesion of a metal layer to a resin base following hot-pressing. If, for the sake of argument, that one did combine these references, there is nothing in this combination of references that teaches or suggests a composite material having improved adhesion of the metal layer to the base resin following “hot-pressing”, i.e. heating under pressure. Applicants submit that the Examiner has not made out a prima facie case of obviousness and respectfully request that this rejection be withdrawn.

Applicants respectfully request favorable reconsideration in the form of a notice of allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "S. Matthew Cairns". The signature is written in a cursive, flowing style.

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Date: June 29, 2004